STATE OF SOUTH CAROLINA
BEFORE THE PUBLIC SERVICE COMMISSION
DOCKET NO. 2013-392-E

In the Matter of:	)	
	)	
Joint Application of Duke Energy Carolinas, LLC and North Carolina Electric Membership Corporation for a Certificate of Environmental Compatibility and Public Convenience and Necessity for the Construction and Operation of a 750 MW Combined Generating Plant Near Anderson, SC	)	JOINT SURREBUTTAL TESTIMONY OF HAMILTON DAVIS AND JOHN D. WILSON ON BEHALF OF SOUTH CAROLINA COASTAL CONSERVATION LEAGUE AND SOUTHERN ALLIANCE FOR CLEAN ENERGY

Q. MR. DAVIS AND MR. WILSON, DID YOU CAUSE TO BE PREFILED IN THIS DOCKET DIRECT TESTIMONY CONSISTING OF 21 PAGES, ALONG WITH TWO EXHIBITS?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of our surrebuttal testimony is to respond to certain points in the rebuttal testimony of Janice D. Hager filed on December 17, 2013, which concerns the joint application filed by Duke Energy Carolinas, LLC ("DEC" or the "Company") and the North Carolina Electric Membership Corporation ("NCEMC") a for a Certificate of Environmental Compatibility and Public Convenience and Necessity for the construction and operation of a 750 megawatt ("MW") combined cycle natural gas-fired generating facility at DEC's existing Lee Steam Station near Anderson, South Carolina (the "Lee NGCC Unit").

Ms. Hager takes issue with several points raised in our direct testimony: DEC's miscalculation of its reserve margin; our recommendation that DEC pursue joint planning with Duke Energy Progress, Inc., which would allow new

generation to be deferred; our assertion that the Company has not adequately pursued all cost-effective energy efficiency and renewable energy alternatives; and our proposal that the Company save customers money by investing in solar, thereby reducing the Lee NGCC Unit's operating costs.

Q. WHAT IS YOUR RESPONSE TO DEC WITNESS HAGER'S REBUTTAL OF YOUR TESTIMONY REGARDING DEC'S MISCALCULATION OF ITS RESERVE MARGIN?

A. Ms. Hager makes three arguments. First, she suggests that North American Electric Reliability Corporation ("NERC") guidance supports either the approach used by DEC (treating demand response as a resource requiring backstand reserves) or the approach recommended by CCL and SACE, and recommended by the North Carolina Utilities Commission (treating demand response as a load modifier). Second, Ms. Hager argues that demand response programs are not 100% responsive, and thus their response is similar to that of a combustion turbine unit. Third, she argues that Astrape Consulting proposed a higher minimum target reserve margin of 15.25% if demand response is treated as a reduction to load. We will address each argument in turn.

Q. IS NERC GUIDANCE INDIFFERENT TO WHETHER DEMAND RESPONSE IS TREATED AS A RESOURCE OR A LOAD MODIFIER, AS MS. HAGER SUGGESTS?

A. No, it is not. Ms. Hager cites the relevant NERC guidance selectively, and fails to address the substantive concerns with the method preferred by DEC. DEC has previously claimed that its demand response programs necessitate backstand reserves because of technical issues that impair customer response. NERC guidance does support consideration of these factors—if DEC's programs were,

in fact, not dispatchable or controllable, then NERC guidance would support the approach that DEC prefers. What Ms. Hager fails to acknowledge is that NERC guidance is not indifferent to the two approaches, but favors the approach we recommend for demand response programs to the extent that they are dispatchable and controllable, and favors the approach that DEC prefers when they are not.

Under NERC guidance, it can be appropriate to evaluate demand response as a resource, as Ms. Hager correctly points out. NERC, however, advises utilities to apply "various performance characteristics described using capacity, associated forced outage rates and temperature sensitivities."[1] In discussing when demand response should be evaluated as a load modifier, the NERC guidance explains, "[i]f the loads can be expected to be reduced with a high degree of certainty, this would be an appropriate modeling technique."[2] In summary, NERC guidance is not indifferent to the choice between the two approaches, but rather guides utilities to look at program-specific data in determining which approach to use.

Q. CAN THE LOAD REDUCTION FROM DEC'S DEMAND RESPONSE PROGRAMS BE ACHIEVED WITH A HIGH DEGREE OF CERTAINTY?

A. Yes, with the exception of one program. Data filed in Appendix D of DEC's 2012 IRP demonstrate that the Company's demand response programs have been activated a number of times, and most programs have achieved reductions consistent with (or even in excess of) expected reductions. Based on the more recent data filed in Appendix D of the 2013 IRP, it appears that DEC's demand

[1] NERC, *Reliability Assessment Guidebook*, Version 3.1 (August 2012) at 14.[2] *Id*.
[2] *Id*.

response programs continue to achieve load reductions with a high degree of certainty. Ms. Hager disputes this contention, referring to the knowledge of "system dispatchers and grid managers" as the sole justification for claiming that "they are not 100% responsive." Her testimony cites no specific evidence and offers no commentary on DEC's actual data filed in Appendix D, however.

The one program that does not appear to achieve load reductions with a high degree of certainty is the Power Manager air conditioner program. Power Manager is the only demand response program operated by DEC for which DEC's data indicate that customer response falls short of program design expectations. Since customer behavior in an air conditioning program is likely to be sensitive to temperatures, DEC's data underscore the fact that NERC's guidance takes the sensible approach of treating demand response programs with consideration given to actual performance. In light of the Power Manager program's performance, DEC should either represent it in reserve margin calculations as a resource, or adjust the expected load reduction to reflect the results of recent experience and performance. Other demand response program impacts, however, should be treated as load adjustments.

Q. DOES THE 2012 ASTRAPE RESERVE MARGIN STUDY PROPOSE A HIGHER MINIMUM TARGET RESERVE MARGIN IF DEMAND RESPONSE IS TREATED AS A REDUCTION TO LOAD?

A. No. In the version of the document that we obtained from the Company, we do not find any discussion of an alternative reserve margin recommended if demand response is treated as a reduction to load.

Furthermore, we reviewed both the DEC and DEP (then Progress Energy

Carolinas) reserve margin studies for any mention of the 15.25% reserve margin recommendation, and could not identify any discussion that might be relevant to the assertions in Ms. Hager's rebuttal testimony.[3]

Q. DOES MS. HAGER'S REBUTTAL TESTIMONY CHANGE YOUR RECOMMENDATION THAT DEC PURSUE JOINT PLANNING WITH DUKE ENERGY PROGRESS?

A. In our direct testimony, we pointed out that under the Joint Planning Scenario, DEC could defer the need to build the Lee NGCC Unit. This would save customers money while maintaining system reliability. Ms. Hager emphasizes the need for regulatory approvals to conduct joint planning, which we acknowledged in our direct testimony. Her rebuttal does not alter our position on this point.

Q. DOES MS. HAGER'S REBUTTAL TESTIMONY CHANGE YOUR ASSERTION THAT THE COMPANY HAS NOT ADEQUATELY PURSUED ALL COST-EFFECTIVE ENERGY EFFICIENCY AND RENEWABLE ENERGY ALTERNATIVES?

A. No, it does not. To be clear, CCL and SACE commend the Company for its regional leadership on energy efficiency, and for recent improvements in the way it models renewable energy resources in its IRP. Yet the fact remains that more aggressive, but still achievable and cost-effective levels of EE and RE could defer the need for new conventional power generation, reducing costs and risks to customers. Moreover, DEC has not selected the IRP's Environmental Focus Scenario referenced by Ms. Hager—which would include significantly greater levels of cost effective EE and RE—but has instead selected its base plan with lower levels of EE and RE.

[3] In the report prepared for DEC, for example, Astrape Consulting twice mentions a 15.25% reserve margin in Table 15, but refers to sensitivities regarding a "+2% Neighbor RM" and an "EUE Cost: $5,000/MWh," neither of which are related to demand response. Astrape Consulting, *Duke Energy Carolinas 2012 Generation Reserve Margin Study* (June 2012) at 49.

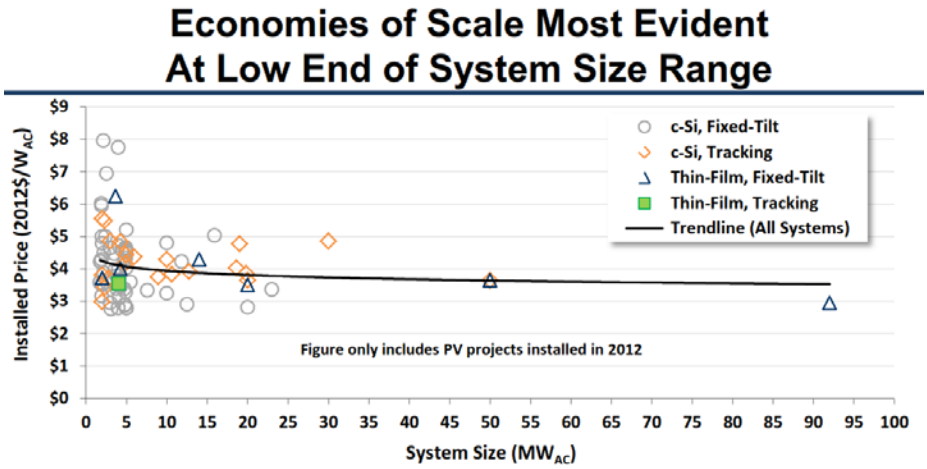
Q. DOES MS. HAGER'S REBUTTAL TESTIMONY CHANGE THE OPINIONS EXPRESSED IN YOUR DIRECT TESTIMONY REGARDING THE VALUE THAT A SOLAR ENERGY INVESTMENT BY THE COMPANY COULD PROVIDE?

A. In our direct testimony, we proposed that the Company could save customers money by investing in cost-effective solar energy resources, thereby reducing the Lee NGCC Unit's operating costs. We also discussed the synergies that solar investment at or near the Lee site could provide, given NGCC generation's ability to complement an intermittent resource like solar. Ms. Hager's testimony either mischaracterizes or misunderstands our testimony in two respects, and does not present any new information that changes our opinion.

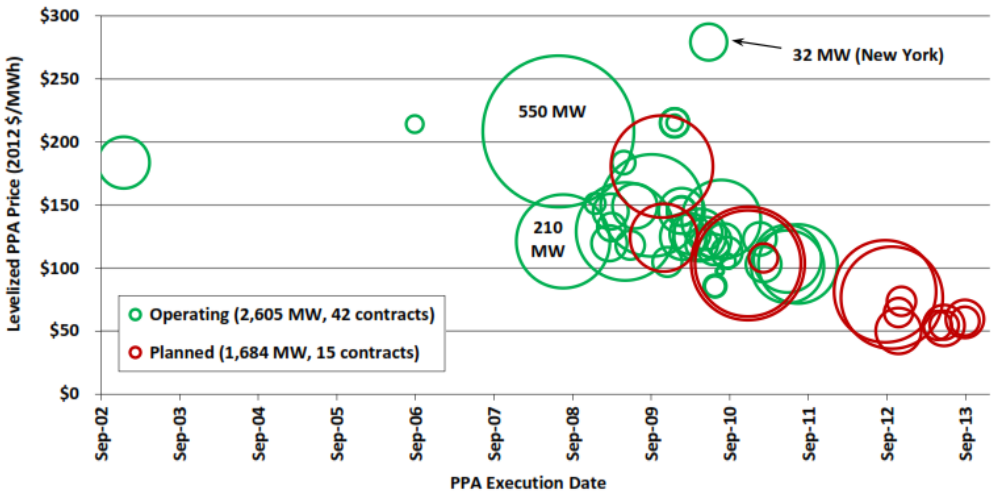
First, Ms. Hager initially characterizes our recommendation as suggesting that DEC could "add 375 MWs of solar *in addition to* the Lee CC Project," (emphasis added) but later in the same paragraph, mistakenly suggests that SACE and CCL recommend the solar project as a "substitute for the Lee CC project." Her initial description is accurate; rather than proposing solar as a "substitute," our testimony recommends that the Commission direct DEC to solicit developer interest in such a facility, which we suggested could be co-located with the proposed Lee NGCC Unit.

Second, Ms. Hager implies that the "smaller projects" solar alternative that we discussed in our testimony would not involve utility-scale projects, stating that smaller projects would have a "higher installed cost per KW" than "utility scale solar." Our testimony discussed projects in the 10 MW to 100 MW range, which are generally considered utility-scale solar. As illustrated in the figure below, excerpted from the Lawrence Berkeley National Laboratory ("LBNL") report

cited in our direct testimony, the economies of scale to which Ms. Hager refers appear to be largely realized when systems reach at least 10 MW in capacity.[4]



In fact, the most cost-effective solar power purchase agreements ("PPAs") cited in the LBNL report appear to be recently planned solar PV projects below 100 MW in size, with PPAs reported at a levelized price of below $60 per megawatt-hour ("MWh"), as illustrated in the following graphic, also from the LBNL report:[5]



[4] Lawrence Berkeley National Laboratory, *Utility-Scale Solar 2012: An Empirical Analysis of Project Cost, Performance and Pricing Trends in the United States* (September 2013).
[5] *Id.*

Q. IN SUMMARY, DID ANYTHING IN DEC WITNESS HAGER'S REBUTTAL TESTIMONY ALTER YOUR RECOMMENDATIONS TO THE COMMISSION?

A. No. In our direct testimony, we made three recommendations to the Commission: First, we recommended that the Commission condition any certification of the Lee NGCC unit on an in-service date of 2018, rather than 2017 as proposed in the Application. Second, we recommended that, in its review of IRPs and certification applications, the Commission ensure that DEC and DEP have exhausted cost-effective opportunities to defer or avoid the additional NGCC plants through lower-cost, lower-risk resources. Third, to take advantage of potential synergies between NGCC generation and solar generation and hedge against the risk of higher-than-projected fuel costs, we recommend that the Commission direct DEC to solicit developer interest in a 375 MW solar facility located at or near the Lee site at a cost consistent with the cost to operate the Lee NGCC unit. We stand by these recommendations.

Q. DOES THAT CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

STATE OF SOUTH CAROLINA
BEFORE THE PUBLIC SERVICE COMMISSION
DOCKET NO. 2013-392-E

In the Matter of:	)	
	)	
Joint Application of Duke Energy Carolinas, LLC and North Carolina Electric Membership Corporation for a Certificate of Environmental Compatibility and Public Convenience and Necessity for the Construction and Operation of a 750MW Combined Generating Plant Near Anderson, SC	)	CERTIFICATE OF SERVICE

I certify that the following persons have been served with one (1) copy of the Joint Surrebuttal Testimony of Hamilton Davis and John D. Wilson on Behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy by electronic mail and/or U.S. First Class Mail at the addresses set forth below:

Len S. Anthony, Counsel
NC Electric Membership Corporation
1701 N. Ocean Blvd.
N. Myrtle Beach, SC 29582
Len.anthony1@gmail.com

Richard M. Feathers
Vice President & Assoc. General Counsel
PO Box 27306
Raleigh, NC 27611
rickfeathers@ncemcs.com

Richard L. Whitt
Austin & Rogers, P.A.
508 Hampton Street, Suite 300
Columbia, SC 29201
rlwhitt@austinrogerspa.com

Timika Shafeek-Horton, Counsel
Duke Energy Carolinas, LLC
P.O. Box 1321 (DEC 45A)
Charlotte, NC 28201
timika.shafeek-horton@duke-energy.com

Nanette S. Edwards, Counsel
Shannon Bowyer Hudson, Counsel
Office of Regulatory Staff
1401 Main Street, Suite 900
Columbia, SC 29201
shudson@regstaff.sc.gov
nsedwar@regstaff.sc.gov

Jacquelyn S. Dickman
Deputy General Counsel
SC Dept. of Health & Environmental Control
SC DHEC
2600 Bull Street
Columbia, SC 29201
dickmajs@dhec.sc.gov

Alvin A. Taylor, Director
SC Dept. of Natural Resources
PO Box 167
Columbia, SC 29202
taylora@dnr.sc.gov

Duane Parrish, Director
SC Dept. of Parks, Recreation and Tourism
1205 Pendleton St. Suite 248
Columbia, SC 29201
dparrish@scprt.com

Doug Jennings
Douglas Jennings Law Firm, LLC
Post Office Box 995
Bennettsville, SC, 29512
doug@jenningslawoffice.com

Charles L.A. Terreni
Terreni Law Firm, LLC
1508 Lady Street
Columbia, SC 29201
Charles.terreni@terrenilaw.com

John H. Tiencken
Paul J. Conway
Tiencken Law Firm, LLC
234 Seven Farms Drive, Suite 114
Charleston, SC 29492
jtiencken@tienckenlaw.com
pconway@tienckenlaw.com

This 23rd day of December, 2013.

s/ Gudrun Thompson